acute myeloid leukemia, chronic myeloid leukemia, osteosarcoma, squamous cell carcinoma, peripheral nerve sheath tumors, renal cancer, malignant mesothelioma, neurofibromatosis benign prostatic hyperplasia, gynacomastica, and endometriosis.

23. The method of claim **20** wherein said tumor is a primary tumor or a metastatic tumor.

24. The method according to claim **20**, wherein the lung cancer is non-small cell lung (NSCL) cancer.

25. The method according to claim **20**, wherein the cancer of the head or neck is squamous cell carcinoma of the head and neck.

26. The method according to claim **20**, wherein the cancer is pancreatic cancer.

27. The method according to claim **20**, wherein the cancer is a breast cancer.

28. The antibody of claim **1**, wherein said anti-human HER3 antibody or fragment inhibits NRG1-rearranged cancers.

29. The antibody of claim **1**, wherein said anti-human HER3 antibody or fragment inhibits cancers with one or more of NRG1-rearranged fusions: (Cluster of Differentiation 74-Neuregulin-1) CD74-NRG1 fusion, (Solute Carrier Family 3 Member 2-Neuregulin-1) SLC3A2-NRG1 fusion, (Syndecan-4-Neuregulin-1) SDC4-NRG1 fusion, DOC4-NRG1 fusion, (Rho-associated protein kinase 1-Neuregulin-1) ROCK1-NRG1 fusion, (Forkhead Box A1-Neuregulin-1) FOXA1-NRG1 fusion, (A-Kinase Anchoring Protein 13-Neuregulin-1) AKAP13-NRG1 fusion, (Thrombospondin 1-Neuregulin-1) THBS1-NRG1 fusion, (Phosphodiesterase 7A-Neuregulin-1) PDE7A-NRG1 fusion, (ATPase Na+/K+ Transporting Subunit Beta 1-Neuregulin-1) ATP1B1-NRG1 fusion, NRG1-PMEPA1 fusion, Clusterin-NRG1 fusion.

30. A patient stratification method where tumors are screened first for NRG1-rearranged fusions and then patients with positive NRG1-rearranged fusions are treated with anti-human Her3 antibody of claim **1**.

31. The method of claim **29**, further comprising, prior to the administering, using a method that comprises analysis of a predictive marker to select a subject having a disease associated with HER3.

32. The method of claim **29**, further comprising an additional therapeutic agent.

33. The method of claim **29**, wherein the additional therapeutic agent is selected from the group consisting of an EGFR inhibitor, a HER2 inhibitor, a HER3 inhibitor, a HER4 inhibitor, an mTOR inhibitor and a PI3 Kinase inhibitor.

34. The method of claim **29**, wherein the additional therapeutic agent is a EGFR inhibitor selected from the group consisting of Matuzumab (EMD72000), Cetuximab, Panitumumab, mAb 806, Nimotuzumab, Gefitinib, CI-1033 (PD183805), Lapatinib (GW-572016), Lapatinib Ditosylate, Erlotinib HCL (OSI-774), PKI-166, and N-[4-[(3-Chloro-4-fluorophenyl)amino]-7-[[(3"S")-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4(dimethylamino)-2-butenamidea HER2 inhibitor selected from the group consisting of Pertuzumab, Trastuzumab, MM-111, neratinib, lapatinib or lapatinib ditosylate/Tykerb®; a HER3 inhibitor selected from the group consisting of, MM-121, MM-111, IB4C3, 2DID12 (U3 Pharma AG), AMG888 (Amgen), AV-203 (Aveo), MEHD7945A (Genentech), MOR10703 (Novartis) and small molecules that inhibit HER3; and a HER4 inhibitor.

35. The method of claim **29**, wherein the additional therapeutic agent is an mTOR inhibitor selected from the group consisting of Temsirolimus, ridaforolimus/Deforolimus, AP23573, MK8669, and everolimus.

36. The method of claim **29**, wherein the additional therapeutic agent is a PI3 Kinase inhibitor selected from the group consisting of GDC 0941, BEZ235, BMK120 and BYL719.

37. The antibody of claim **29**, wherein the antibody is conjugated to an imaging agent, therapeutic or a chemotherapeutic agent, a toxin or a radionuclide.

38. The method of claim **29**, wherein said therapeutic or chemotherapeutic group is selected from the group consisting of calicheamicin, auristatin-PE, geldanamycin, maytansine and derivatives thereof.

39. The method of claim **1**, wherein the antibody or fragment thereof is administered by a route selected from the group consisting of oral, subcutaneous, intravenous injection intraperitoneal, intramuscular, intracerebroventricular, intraparenchymal, intrathecal, intracranial, buccal, mucosal, nasal, and rectal administration.

40. The method of claim **1**, wherein the antibody or fragment is formulated into a pharmaceutical composition comprising a physiologically acceptable carrier, excipient, or diluent.

* * * * *